

ELECTRICALLY DECOUPLED INTEGRATED TRANSFORMER HAVING AT LEAST ONE GROUNDED ELECTRIC SHIELD

ABSTRACT OF THE DISCLOSURE

An integrated circuit, such as a radio frequency integrated circuit (RFIC), has a first layer bearing first metallization patterned for defining a first inductive coil, a second layer bearing second metallization patterned for defining a second inductive coil that overlies the first inductive coil and that is magnetically coupled to the first inductive coil through a third layer interposed between the first layer and the second layer. The third layer bears third metallization for defining an electric shield or electrostatic shield. The third metallization is patterned into a plurality of structures having shapes intended to minimize eddy currents. The electric shield is connected to further metallization that carries a ground potential. The third layer may further bear other metallization for coupling together at least two components of the integrated circuit. The integrated circuit may be fabricated by a CMOS process, and the first and second coils may be a primary coil and a secondary coil, respectively, of a radio frequency transformer. An additional electric shield may also be included, and in this case one electric shield can be coupled to a ground potential associated with the primary coil, and the second electric shield can be coupled to a ground potential associated with the secondary coil.